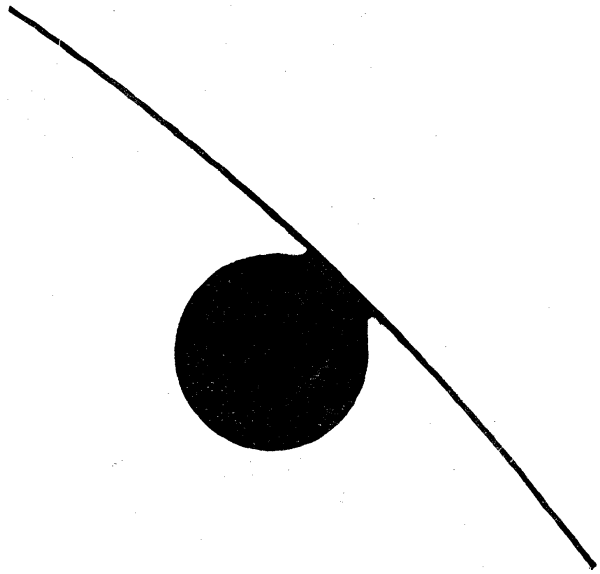
Observation of the Transit of Venus, 1882, *December* 6, *made at Crowborough, Sussex.* By C. Leeson Prince.

The morning of Dec. 6 looked as unpromising for seeing the very interesting phenomenon which was about to happen as could well be imagined. The temperature at 9 a.m. was only 31°; the barometer was low and the wind N. Added to this the sky was so densely overcast that one of Crookes's radiometers scarcely performed one revolution per minute, and slight showers of hail, sleet, and snow were falling at intervals until noon. The first gleam of sunshine appeared at $1^h\ 40^m$, but two minutes afterwards the Sun was again obscured till $1^h\ 55^m$ by a large mass of cumulus cloud lying above some drifting scud. The Sun was obscured till $2^h\ 12^m$, when, through a break in this cloud, the Sun shone out with *Venus* having passed half her diameter upon his disk. A minute afterwards the Sun was again obscured till $2^h\ 16^m$ when the heavier clouds passed away, and I had no further serious interruption from them during the remainder of the afternoon. On account of my elevation above sea-level (825 feet) I was favoured by being situated just above some drifting scud, a dense stratum of which was passing below me; and when, now and then, a thin portion of this passed before the Sun, it rather tended to improve the definition than otherwise. From $2^h\ 16^m$, therefore, I watched very attentively the near approach of internal contact. At $2^h\ 17^m$ I first noticed the visibility of that portion of the planet still outside the Sun's disk, and which appeared to be illuminated by a brilliant silver line of light, which most distinctly marked the limb of that portion of the planet, and which was doubtless produced by the refraction of sunlight passing through the planet's atmosphere. The effect was very beautiful. At $2^h\ 22^m\ 7^s$ I noticed that the planet's disk became slightly distorted, and then apparently elongated upon the Sun's limb, so that I became somewhat perplexed how I should determine the instant of contact. This feature continued till $2^h\ 22^m\ 15^s$, when I observed the following. This shadow, or ligament, or whatever it was, *suddenly* left the Sun's limb in something less than a second of time, and gathering up towards the planet was no longer visible. It did not lengthen itself, or become narrower, or form a black drop towards the Sun, but merely disappeared, as I have before said, close to the planet. When this had happened I found that internal contact was over, and that there was a clear line of separation between the two limbs. I consider, therefore, that the above time of $2^h\ 22^m\ 15^s$ was *late*, and that actual contact had been over 3^s or 4^s, which would bring the time of contact to correspond very closely indeed with the theoretical time of contact for my Observatory, which was kindly sent me by Dr. Hind on the 3rd inst.—viz.

$2^h\ 22^m\ 11^s$. The following is a sketch of the phenomenon about $2^h\ 22^m\ 12^s$:—



I next directed my attention to the general appearance of *Venus*, now fully upon the Sun's disk, and I at once perceived that a halo of yellowish light surrounded her—it was not a *ring*, as in the case of *Mercury*, but a very diffused light, and constantly varying in breadth—now here, now there. As the planet advanced, this halo became much fainter, until at 3 p.m. it was no longer visible. There was no appearance of a satellite. The planet's surface was uniformly black, without the slightest speck of light visible anywhere upon it. At $3^h\ 30^m$ I went to my upper Observatory with the intention of watching the phenomenon down to the horizon with my 3-in. Wray Telescope. When within five degrees of the visible horizon the planet became decidedly elongated, and just at last almost linear. It was a splendid sunset—the Sun, shorn of rays and of a beautiful carmine colour, lit up some surrounding clouds with many gradations of the same tint, the effect of which was visible some time after the disappearance of the magnificent orb with its planet behind a large mass of cumulo-stratus cloud lying over the sea. It was a sight not to be forgotten by those who witnessed it. I did not take any micrometrical measures or photographs, having quite decided upon merely watching what might happen, and recording what was noteworthy.

I made use of my Tulley Equatorial, of 6·8 inches aperture and twelve feet focal length, to which I applied a Dawes' solar eyepiece with a power of 100.

The Observatory, Crowborough:
1882, *Dec.* 7.

Observation of the Transit of Venus, 1882, *December* 6. By W. E. Cooper.

I had a very good observation of the transit of *Venus* of December 6 with my 9-in. silver-on-glass Reflector by Calver; power used about 150. The definition was good, the rice grains being *very* distinctly visible a short time before the transit.

Latitude N.	...	...	52° 14′ +
Longitude W.	...	...	2 12 45

Clock 11ˢ fast.

Owing to clouds the first contact not seen.

	h m s	Corrected Time = −11ˢ. h m s
Dark limb of *Venus* first seen	2 2 45	2 2 34
Not half on limb of Sun	2 10 30	—
Half on limb of Sun	2 11 30	2 11 19
More than half	2 11 46	—
Venus wholly visible	2 14 30	2 14 19
Internal contact not taken place	2 20 0	—
The last appearance of any well marked discontinuity in the illumination in the limb of the Sun near point of contact	2 21 55	2 21 44
Internal contact over	2 22 4	—

The Mount, Worcester:
1882, *Dec.* 7.

Ephemeris of the Satellites of Uranus, 1883. By A. Marth.

The major and minor semiaxes a and b of the apparent ellipses described by the satellites, the angle of position P of the minor axes in the direction of superior conjunction, and the latitude of the Earth above the assumed plane of the orbits, are the following:—